

REMARKS

Applicant respectfully requests reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow. Claims 39, 41-52, and 55-58 have been rejected. Claims 127-139 are requested to be cancelled, and Claims 41, 46, and 49-52 are currently being amended. Accordingly, Claims 39, 41-52, and 55-58 remain pending in the present application.

This amendment adds, changes and/or deletes claims in this application. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claim(s) remain under examination in the application, is presented, with an appropriate defined status identifier.

Elections/Restrictions

On page 1 of the Office Action, the Examiner indicated that Claims 127-139, which were presented in the Amendment and Reply filed on October 2, 2003, have been withdrawn from consideration as being "directed to an invention that is independent or distinct from the invention originally claimed." While the Applicants do not necessarily agree with this election/restriction requirement, Claims 127-139 have been cancelled by this amendment to advance prosecution on the merits.

Double Patenting

On page 6 of the Office Action, the Examiner indicated that Claims 39, 42, 43, and 55 are rejected under the judicially created doctrine of obvious-type double patenting as being unpatentable over claims 1-14 of U.S. Patent No. 6,274,274 ("the '274 patent").

The present application and the '247 patent are commonly owned.

The Applicants request that the double patenting rejection of Claims 39, 42, 43, and 55 over Claims 1-14 of the '274 patent be held in abeyance until allowable independent claims are indicated by the Examiner in the present Application (since a timely filed terminal disclaimer would overcome the rejection such that further consideration of the claims on that rejection should not be necessary). 37 C.F.R. § 1.111(b).

Specification and Claim Rejections – 35 U.S.C. § 112

On page 2 of the Office Action, the specification is objected to under 35 U.S.C. § 132 because the Examiner has indicated that it introduces new matter into the disclosure. The Examiner indicated that the phrase “applying a torsional stress to the wire at the position intermediate the opposed ends of the wire” in Claim 41 is not supported in the originally filed application.

Also on page 2 of the Office Action, the Examiner rejected Claims 41 and 46-52 under 35 U.S.C. § 112, ¶ 1, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The Examiner indicated that the limitation “applying a torsional stress to the wire at the position intermediate the opposed ends of the wire” is not disclosed in the instant specification.

While the Applicants disagree with the objection under 35 U.S.C. § 132 and the rejection under 35 U.S.C. § 112, ¶ 1, Claim 41 has nevertheless been amended to delete the language “applying a torsional stress.” Specifically, Claim 41 now recites “rotating at least a portion of the wire at the position intermediate the opposed ends of the wire.” Support for such amendment may be found, for example, at page 29, lines 16-21 of the present specification, which states:

Alternatively, a stamping die may be used that rotates the intermediate portion of the grid wire elements about 20 to about 70 degrees in relation to the cross-section of the opposed ends of the grid wire where the grid wire and node meet as depicted in Figure 3.

By amending Claim 41, the Applicants wish to make it unmistakably clear that they do not agree to or acquiesce in the objection under 35 U.S.C. § 132 and the rejection of Claims 41 and 46-52 under 35 U.S.C. § 112, ¶ 1. Claim 41 has been amended (without prejudice to further prosecution on the merits) only to obtain prompt allowance of Claims 41 and 46-52 as currently presented.

Additionally, Claims 46 and 49-52 have been amended to depend directly from independent Claim 39.

Accordingly, the Applicants request withdrawal of the rejection under 35 U.S.C. § 132 and the rejection of Claims 41 and 46-52 under 35 U.S.C. § 112, ¶ 1.

Claim Rejections – 35 U.S.C. § 103(a)

1. Claims 39 and 55-58

On page 3 of the Office Action, the Examiner rejected Claims 39 and 55-58 as being obvious over U.S. Patent No. 5,851,695 to Misra et al. ("Misra et al.") in view of U.S. Patent No. 5,611,128 titled to Wirtz ("Wirtz") as evidenced by U.S. Patent No. 5,958,625 to Rao ("Rao"). On page 4 of the Office Action, Claims 42-43 were rejected as being unpatentable over Wirtz in view of Misra et al. and International Publication No. WO 99/27595 to Kao et al. ("Kao et al.") under 35 U.S.C. § 103(a).

Wirtz is directed to "battery grids, method and apparatus." The Examiner acknowledged that "Wirtz et al. [sic] do not teach a first transverse cross section of the grid element is different from a second transverse cross section of the opposed grid element."

However, the Examiner indicated that:

Misra et al. teach a method to fabricate battery grid [sic] for a lead acid battery, wherein grid (88) includes an outer peripheral member (220, 222) and intermediate members (224, 226). See Figure 14. Misra et al. disclose the longitudinally and vertically extending elongated members 224, 226 having diamond and triangular cross-sectional areas, respectively. Also, the outer peripheral members (220, 222) are preferably of generally hexagonal cross section. See Figure 21. Misra et al. also conclude that polygonal cross-section of various members provides enhanced paste adherence to the grid over that achieved if circular cross-section members are used. The diamond and triangular shapes of elongated paste support

members (224, 226) provides good adherence between the active material paste and the grid.

The Examiner concluded that

Therefore, it would have been obvious to one of ordinary skill in the art to modify the cross-sectional area of the grid elements in the method of making a battery of Wirtz et al., because Misra et al. teach the resulting paste adherence to the battery grid can be enhanced if difference cross-sections, such as hexagonal and diamond, are employed at the opposed ends of the grid element.

Misra et al. relates to a “recombinant lead-acid cell and long-life battery and shows a “positive plate grid” having “longitudinally extending elongated paste support members 224 and vertically extending elongated paste support members 226” (Column 19, lines 5-7). In a preferred embodiment, “longitudinally and vertically extending elongated paste support members 224, 226 respectively have diamond and triangular cross-sectional areas” (Column 19, lines 18-21).

Claim 39 is in independent form and recites a “method of making a battery” comprising, in combination with other elements, “modifying at least one of the wires at a position intermediate the opposed ends of the wire such that a first transverse cross-section taken intermediate the opposed ends of the wire differs from a second transverse cross-section of the wire taken at one of the opposed ends of the wire”. Claims 55-58 depend from Claim 39.

The method recited in independent Claim 39 would not have been obvious in view of Wirtz, alone or in any proper combination with Misra et al. and Rao under 35 U.S.C. § 103(a). Independent Claim 39 explicitly recites “modifying at least one” existing wire “at a position intermediate the opposed ends of the wire.” Wirtz, alone or in any proper combination with Misra et al. and Rao, does not disclose, teach or suggest a method that includes the step of “modifying at least one” existing wire “at a position intermediate the opposed ends of the wire.”

Further, neither Wirtz, Misra et al., nor Rao discloses, teaches, or suggests modifying an existing wire such that a “first transverse cross-section taken intermediate the opposed

ends of the wire differs from a second transverse cross-section of the wire taken at one of the opposed ends of the wire,” as recited in independent Claim 39. Misra et al. does not disclose, teach, or suggest that the cross-section of the “paste support members” disclosed therein is such that a “first transverse cross-section taken intermediate the opposed ends of the wire differs from a second transverse cross-section of the wire taken at one of the opposed ends of the wire,” as recited in independent Claim 39.

To transform the “battery grids” of Wirtz, the “positive plate grid” of Misra et al., and the “grids” of Rao into a method that includes “modifying at least one of the wires at a position intermediate the opposed ends of the wire such that a first transverse cross-section taken intermediate the opposed ends of the wire differs from a second transverse cross-section of the wire taken at one of the opposed ends of the wire” as recited in Claim 39 would require further modification, and such further modification is taught only by the Applicants’ own disclosure.

The method recited in independent Claim 39, considered as a whole, would not have been obvious in view of the “battery grids” of Wirtz, the “positive plate grid” of Misra et al., and/or the “grids” of Rao. The rejection of Claim 39 over Wirtz in view of Misra et al. and Rao under 35 U.S.C. § 103(a) is improper. Therefore, Claim 39 is patentable over Wirtz in view of Misra et al. and Rao.

Dependent Claims 55-58, which depend from independent Claim 39, are also patentable. See 35 U.S.C. § 112 ¶ 4.

The Applicants respectfully request withdrawal of the rejection of Claims 39 and 55-58 under 35 U.S.C. § 103(a).

2. Claims 42-43

On page 4 of the Office Action, Claims 42-43 were rejected as being unpatentable over Wirtz in view of Misra et al. and International Publication No. WO 99/27595 to Kao et al. (“Kao et al.”) under 35 U.S.C. § 103(a).

Claims 42-43 depend from independent Claim 39.

As described above, the combination of Wirtz and Misra et al. does not disclose, teach, or suggest the step of “modifying at least one of the wires at a position intermediate the opposed ends of the wire such that a first transverse cross-section taken intermediate the opposed ends of the wire differs from a second transverse cross-section of the wire taken at one of the opposed ends of the wire,” as recited in independent Claim 39.

Kao et al. relates to a “stamped battery grid” and discloses a “grid” that is “made by stamping, or punching the grid from a continuous sheet of lead material” (Page 5, lines 4-5). The grids “are punched to shape while maintaining a continuous strip” and the resulting “grid shapes will likely result from a progressive punching operation” (Page 5, lines 7-9). Kao et al. does not, however, disclose, teach or suggest the step of “modifying at least one of the wires at a position intermediate the opposed ends of the wire such that a first transverse cross-section taken intermediate the opposed ends of the wire differs from a second transverse cross-section of the wire taken at one of the opposed ends of the wire” as recited in independent Claim 39 (as amended).

The subject matter recited in dependent Claims 42-43 would not have been obvious over Wirtz et al. and Misra et al. in view of Kao et al. under 35 U.S.C. § 103(a). Wirtz et al., Misra et al., and Kao et al., alone or in any proper combination, do not disclose, teach or suggest the “method of making a battery” as recited in independent Claim 39. Furthermore, to transform the combination of the “battery grids” of Wirtz, the “positive plate grid” of Misra et al., and/or the “stamped battery grid” of Kao et al. to the “method of making a battery” recited in independent Claim 39 would require still further modification, and such modification is taught only by the Applicants’ own disclosure.

The subject matter recited in dependent Claims 42-43, considered as a whole, would not have been obvious to a person having ordinary skill in the art in view of the “battery grids” of Wirtz, the “positive plate grid” of Misra et al., and/or the “stamped battery grid” of Kao et al. The rejection of Claims 42-43 over under 35 U.S.C. § 103(a) is improper. Therefore, Claims 42-43 are patentable over Wirtz et al. and Misra et al. in view of Kao et al.

* * *

It is submitted that each outstanding objection and rejection to the Application has been overcome, and that the Application is in a condition for allowance. Claims 39, 41-52, and 55-58 will be pending in this Application. The Applicants request consideration and allowance of all pending Claims 39, 41-52, and 55-58.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

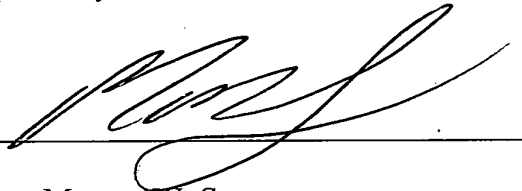
The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 06-1447. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 06-1447. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 06-1447.

Respectfully submitted,

Date

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